MARYLAND WATER MONITORING COUNCIL

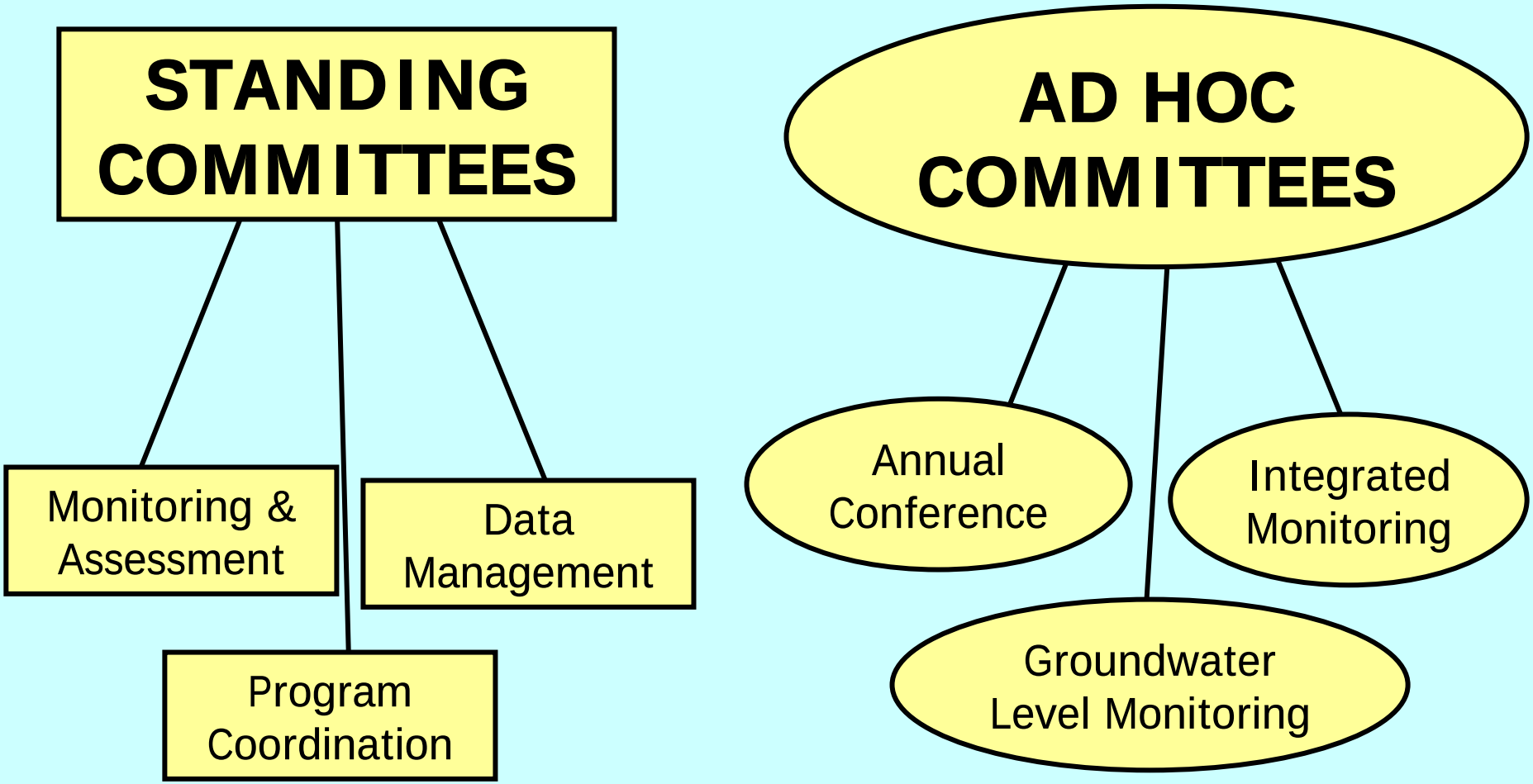
Our vision for monitoring in Maryland…

The MWMC envisions a time when monitoring methods, programs, projects, and data are the product of collaboration and comparability among agencies and organizations. The resulting information will be accessible for use by all stakeholders and will facilitate sound decision-making in environmental management and protection.

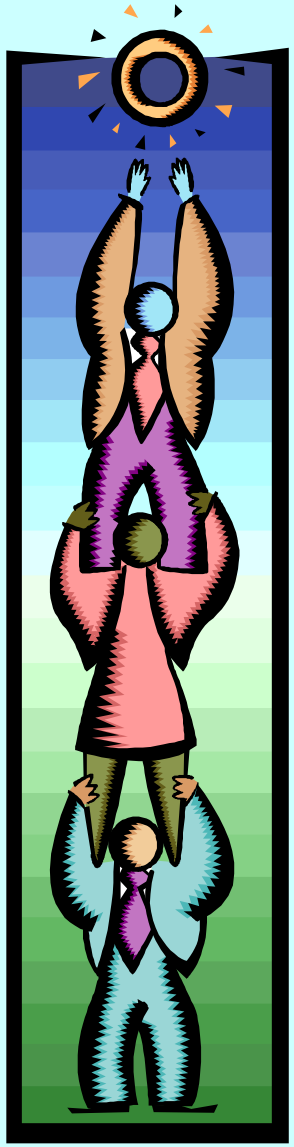
MWMC board membership (monitoring stakeholder groups)

- State Agencies (4)--at least one each from Department of Natural Resources and Maryland Department of the Environment
- Local Governments (4)
- Federal Agencies (2)
- Volunteer Groups-Environmental Organizations (2)--one of which has statewide affiliation
- Academia (2)
- Intergovernmental Organizations (2)
- Consultants and Industry (2)
- At-large Members (2)
- Psychologists (2)

MWMC organizational structure



How is MWMC supported?



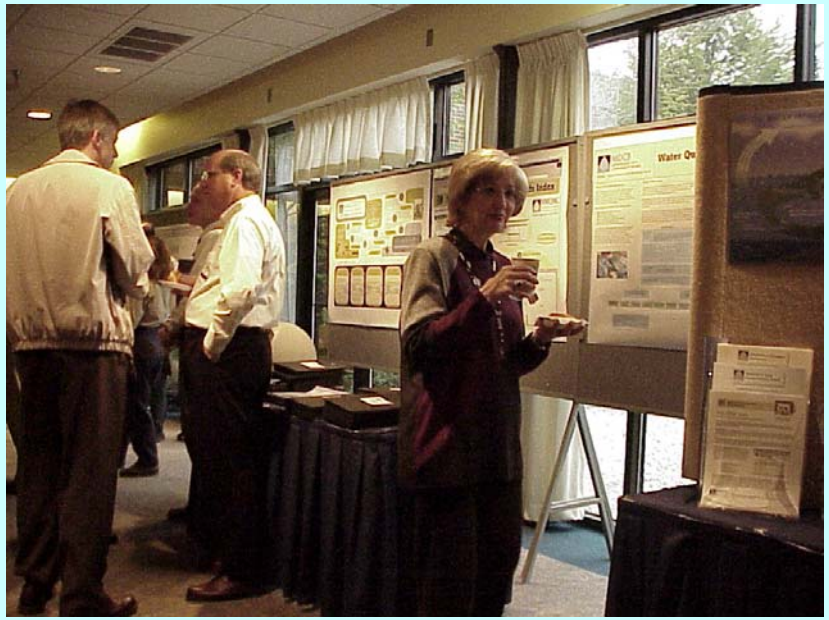
- 319 grant through Maryland DNR has provided part-time staff support (Executive Secretary)—grant ending!
- Time volunteered by Board and committee members
- Time/in-kind resources donated by member organizations

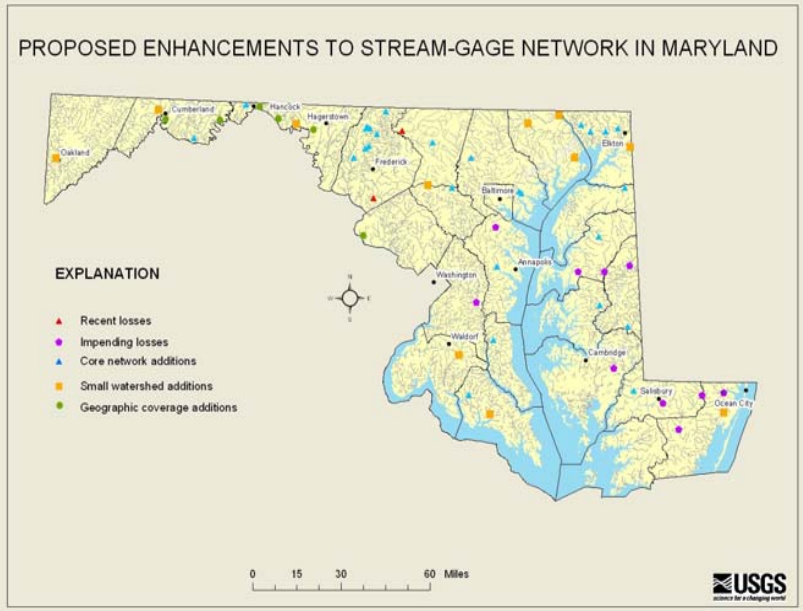
Future Funding

- Bake Sales
- Lottery
- Slots
- CZM Grant
- MACRO Grant
  (Maryland Mediation and Conflict Resolution Office)
- In-kind

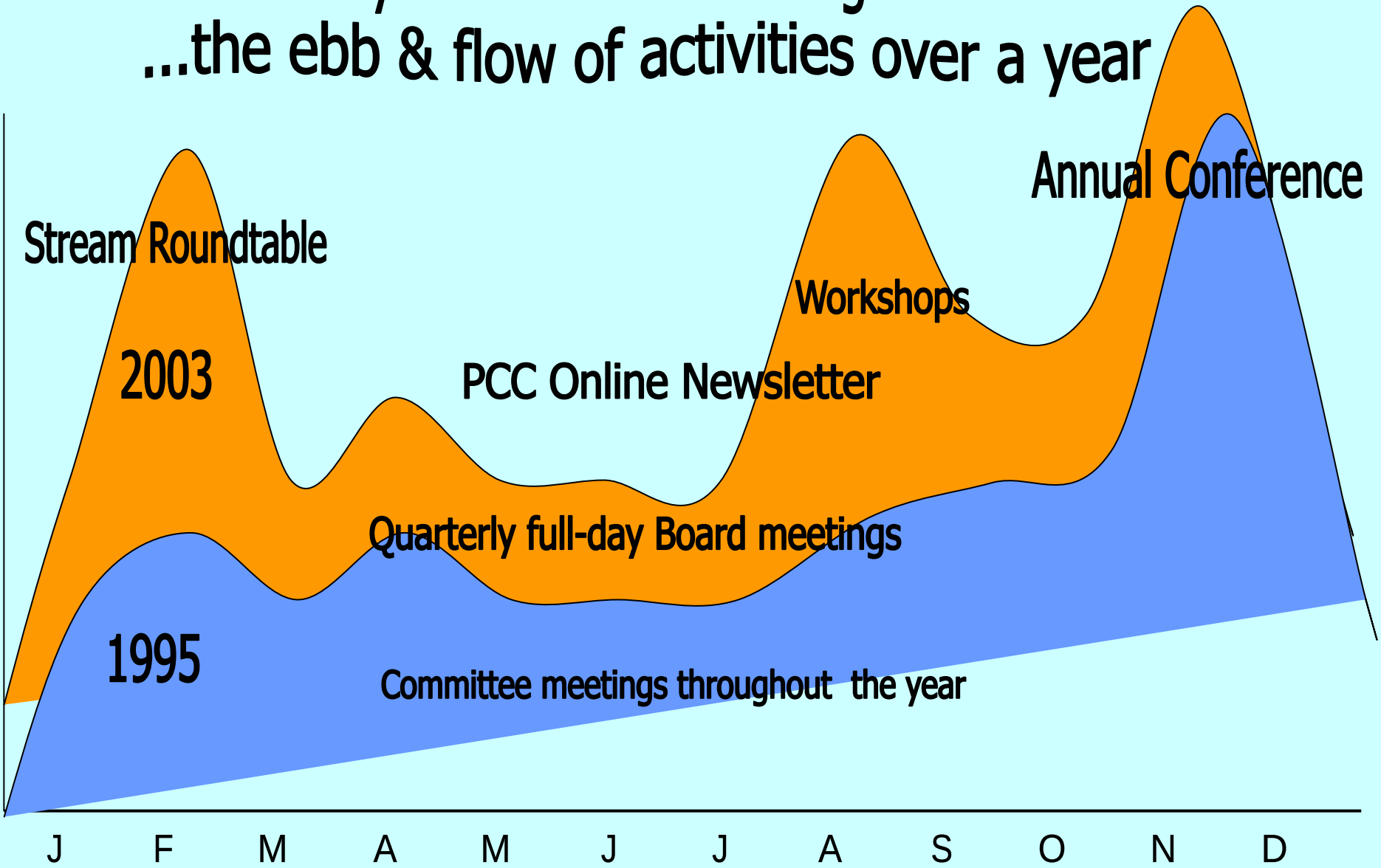
MWMC activities

- 1-2 Annual Workshops
- Annual Conference (10th 200-250 attendees)
- Monthly-bimonthly committee meetings
- Surveys, proceedings, technical reports
- Web Page
- Online Newsletter
- Advisory Committees





Pulse of the Maryland Water Monitoring Council
...the ebb & flow of activities over a year



Strategic planning & capacity building

- Initial meeting held September 17, 2002.

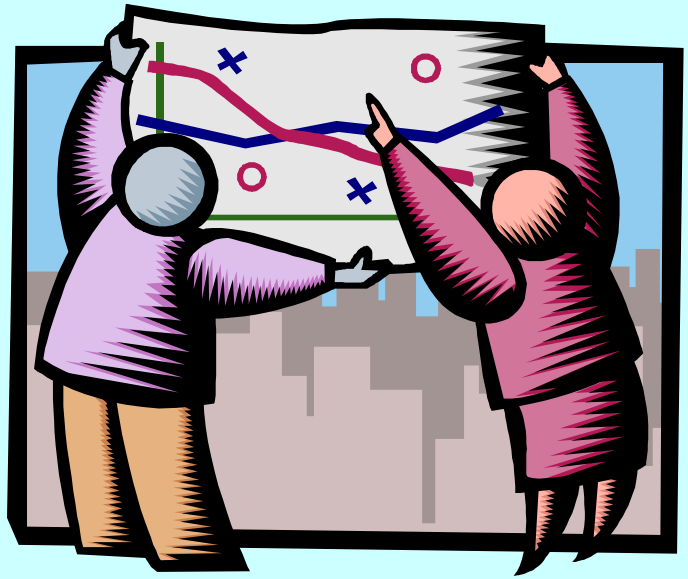
- ✓ Work smarter not harder
- ✓ Focus energies
- ✓ Ensure we're all working toward same goals
- ✓ Assess and adjust our direction in response to a changing environment

Putting it all together…

GOALS	ISSUES & CHALLENGES IN FULFILLING OUR ROLE	ACTIVITIES TO ADDRESS CHALLENGES
FACILITATING COLLABORATION	•Assure a membership body that represents all water-related disciplines within the State of Maryland •Provide a forum of open communication with water monitoring groups and individuals, where issues related to monitoring can be addressed	• Health Department Board Members • New Local Governments • Academic Community Meetings – New faculty • MWMC newsletter • Annual conference • Monitoring roundtable • MWMC website • Topical Workshops • PCC Support • Board Meeting Announcements in the Maryland Register
PROMOTING COMPARABILITY	•Develop an inventory of monitoring program goals and assess the monitoring needs of the community • Support methods that focus on developing coordinated and collaborative approaches that will lead to comparable data collection methods that address local and regional needs • Develop a meta-data, web-based clearinghouse that includes a description of the different programs and contains data sets, study results, and reports and link them to participating organizations	• Recommendations from the GW workshop • Hydrologic system workshop • Monitoring roundtable • Topical Workshops (e.g., QA/QC, sampling design, etc.) • Watershed Monitoring • NWQMC – website for methods and comparability, National Methods Board • Surf Your Watershed w/DNR • PCC – minimum data elements for watershed and stream restoration
BUILDING CAPACITY	•Establish a permanent, paid or volunteer staff to oversee various monitoring initiatives	• Annual Meeting • Explore Nonprofit Status • Retirees

Individual work plans being developed by

- Standing Committees
  - Monitoring & Assessment
  - Data Management
  - Program Coordination
- Stakeholder groups
  - Federal government
  - State government
  - Local government
  - Academia
  - Industry/Consultants
  - Volunteer/Watershed



Focus on these three stakeholder groups—

1. articulate the value of the Council to these constituencies

2. determine what these groups need from the Council--develop activities designed specifically to meet their needs

Stakeholder Group Plans-Academic Community

- Contact all academic researchers in the aquatic field (community college and above)
  - Describe the Council structure, goals/vision, activities
  - Describe benefits that MWMC could have to academic community
  - Request basic information regarding research activity of faculty member
  - Request participation in Council events (workshops, annual conference, newsletter)
  - Share information about the MWMC with colleagues and students
- The final product will be an inventory (telephone book) of the academic community doing research involving water monitoring which will be linked to the MWMC web page

Stakeholder Group Plans-Business Community

- ID key private sector players--poll counties, MDE, DOT, MDA, ag extension agencies, NRCS for good contacts. Seek broad geographic spread.
- Develop message/materials tailored to private sector, including MWMC vision/mission and stressing participation from this sector needed to reach goals. List examples and success stories demonstrating MWMC effectiveness. Examples can include successful public/private partnerships and may come from other state/basin councils. MWMC Board should request that NWQMC compile success stories and provide material to state councils.
- 2003 annual conference - the focus on restoration is excellent forum for involving developers or private consultants, especially those designing/implementing restoration projects. Invite speakers, posters.

Stakeholder Group Plans-Volunteer Community

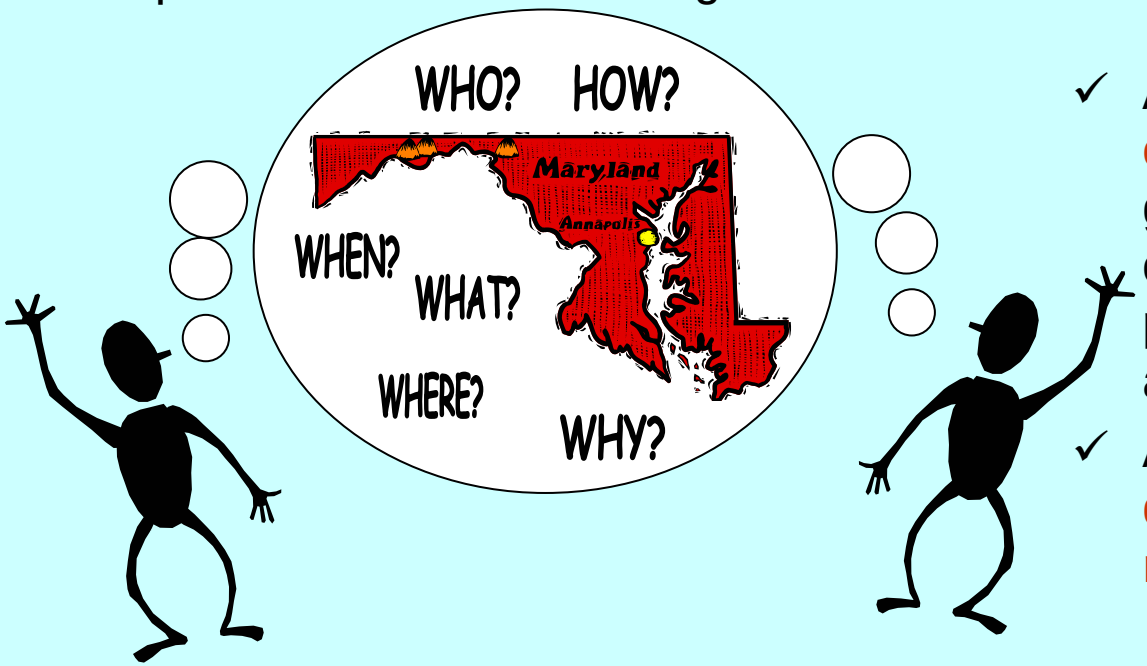
- Develop technical and institutional training workshops
  - Contact watershed groups and discuss their interest – what do they want, need?
  - Find Funds, training resources
  - Integrate topics with the work/needs of other member orgs/agencies
    - DNR Stream waders /synoptic sampling
    - USGS Flow monitoring and crest gages
    - CWP/Balt Cit/Co Illicit Discharge Detection
    - Basic Data Interpretation
    - DNR, Balt Co geomorphic assessment – cross sections
    - How to partner with Local Govts, State Others

Programmatic Coordination

Summer 2000: MWMC approved white paper developed by PCC:
Maryland Water Monitoring Council Programmatic Coordination Committee: Monitoring Coordination: Issues and Approaches.

Consensus reached on the need for…

- ✓ A program meta-data clearinghouse as one of the initial steps.
- ✓ A comprehensive statement of water monitoring goals for Maryland agencies, the approaches that can be used to address these goals, and the programs currently in place in relation to these goals.

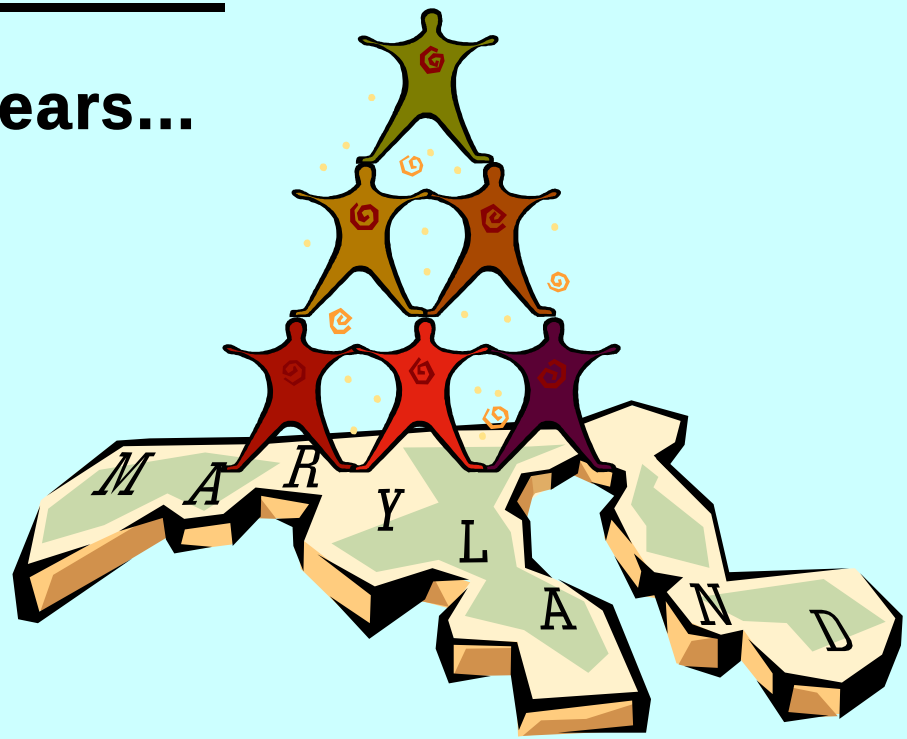


- ✓ A process for routine information exchange among monitoring groups to encourage collaboration when locations, program goals, and approaches are compatible.
- ✓ A collaborative effort in the development of a statewide monitoring strategy.

Programmatic Coordination

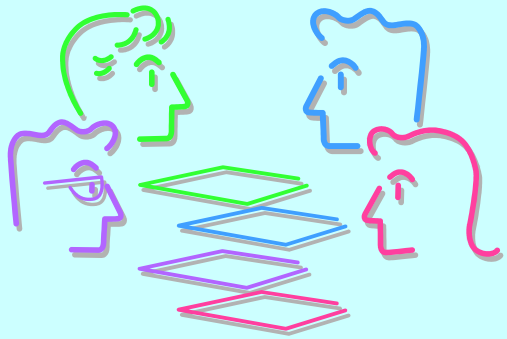
PCC activities in the last 2 years…

- ✓ Implemented the *Monitoring Program Survey*
- ✓ Conducted a comparison among NPDES MS4 jurisdictions for required MDE design manual monitoring
- ✓ Held a Roundtable Workshop on Annual Monitoring Plans (with Monitoring and Assessment Committee)



- ✓ Championed the use of locally-collected data by Bay Program Modeling Subcommittee to represent urban stormwater loads (working with MWCOG)
- ✓ Developed stream restoration tracking database (led by DNR for Bay Program commitments) and potential use for MS4 permit required watershed restoration tracking
- ✓ Promoted stream restoration monitoring to meet nutrient/sediment reduction goals for Bay Program and watershed accounting.

Programmatic Coordination



Potential work plan items…

- Develop the *web-based* clearinghouse of program meta-data.
- By the end of the 2004, develop a draft for "A comprehensive statement of water monitoring goals for Maryland agencies, the approaches that can be used to address these goals, and the programs currently in place in relation to these goals."
- Continue discussions with monitoring agencies around assuring comparability across jurisdictions. Look at standard operating procedures that are being developed and to use the data if possible for predicting sediment and associated nutrient reductions by implemented projects. This would include identifying appropriate tools to monitor and track these changes.

- Continue coordination with Urban Stormwater Workgroup and MD Tracking Subcommittee so that a comprehensive suite of BMPs are considered for the Bay Restoration and Tributary Strategies.

Monitoring & Assessment

Objectives…

- Promote collection of high quality and easily-shared water monitoring data
- Disseminate information about water monitoring programs to all interested parties
- Promote use of appropriate analytical procedures to prepare meaningful assessments of water quality conditions
- Promote presentation of understandable findings in technical and non-technical forums
- Assist in planning annual MWMC conferences

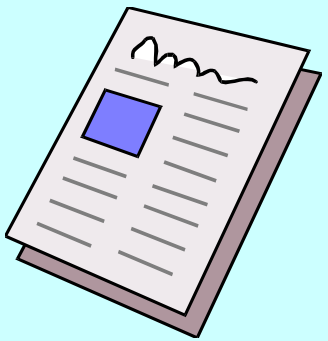
Monitoring & Assessment

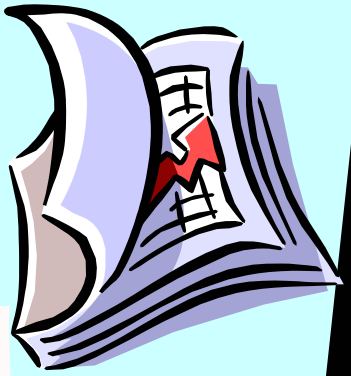
Past activities and accomplishments...

- ✓ Workshop on reference conditions for biological stream health assessments
- ✓ Two workshops on sampling design considerations for water monitoring programs
- ✓ Expansion of MWMC involvement into tidal waters
- ✓ Workshop on macroalgae in MD's Coastal Bays
- ✓ Education event for National Water Monitoring Day Festival
- ✓ Spin-off ideas for workshops developed by other MWMC committees
- ✓ Annual Stream Monitoring Roundtables

Monitoring & Assessment

Ongoing & future activities...





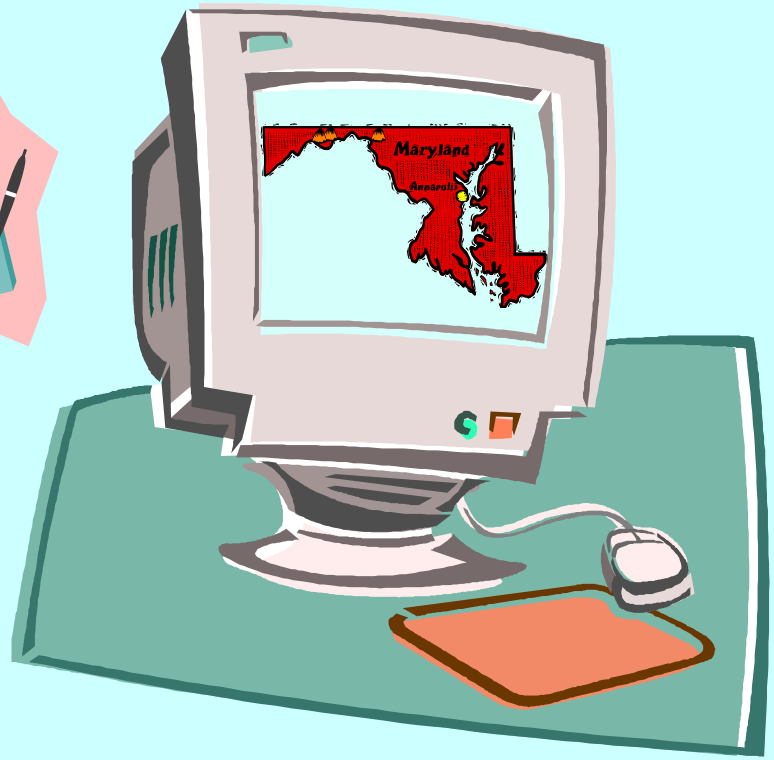
- ✓ Post 2004 Stream Roundtable report on MWMC website
- ✓ Continue to develop "clickable map"
- ✓ Communicate, coordinate, and collaborate with waste water and human health service community
- ✓ Host restoration monitoring workshop in 2005
- ✓ Review sections of draft 305b reports prepared by MD/DNR - beginning early 2004
- ✓ Organize QA/QC workshop: "Generating Confidence in the Data" - late 2004
- ✓ Develop press releases on stream/watershed conditions-- beginning late 2004

Data Management

Draft Mission…

The Data Management Committee's (DMC) mission is to promote data sharing and information exchange among diverse groups collecting and using water monitoring data in Maryland, in support of the Maryland Water Monitoring Council collaboration and coordination mission. The DMC will achieve this result by developing tools, recommendations, standards and guidance that facilitate effective information exchange in a real-time environment, and by increasing the use of water monitoring data between diverse programs.

Data Management



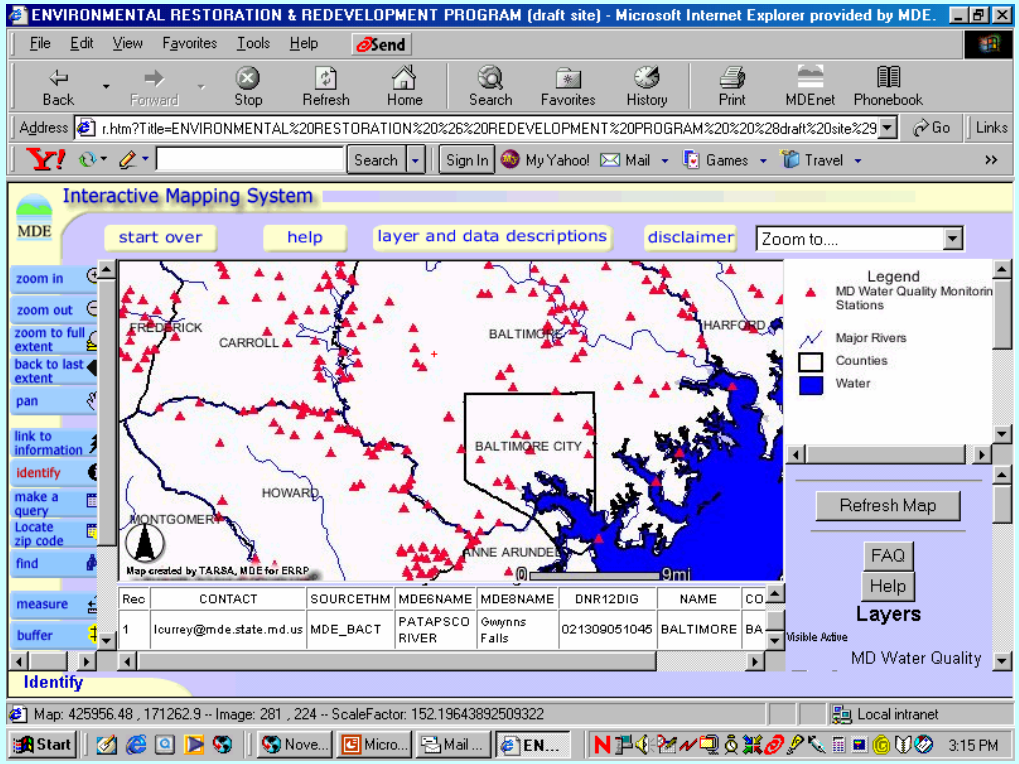
Past activities and accomplishments…

- Developed a Minimum data elements document standardizing a baseline set of data fields to facilitate data sharing
- Initiated implementation of the “clickable” map concept where monitoring data and information could be accessed through a GIS interface
- Developed a database of Non-tidal Tributary Water-Quality Monitoring Programs in the Chesapeake Bay Watershed

Data Management

Current activities...

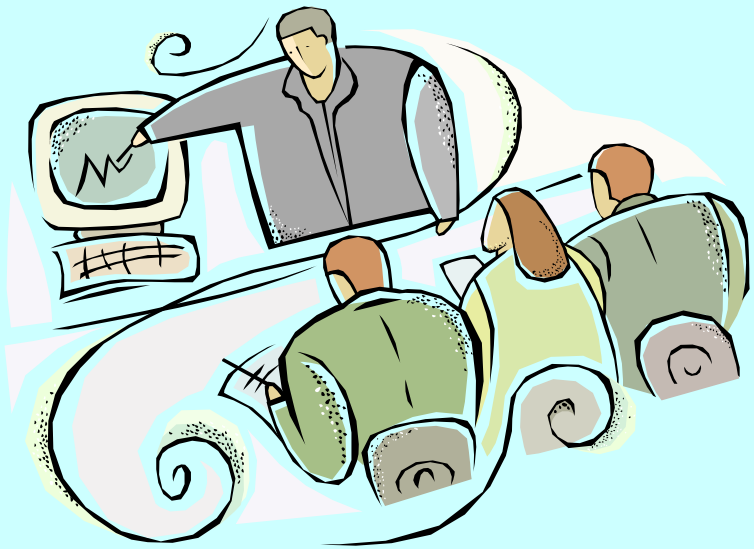
- Developed an ARC-IMS Mapping tool to promote sharing of water monitoring program metadata and geographic coordinate data (http://cuereims.umbc.edu/MWMC/).
- Developed an on-line Web survey form to facilitate metadata submittal and minimize data manipulation.



- Revised the Mission Statement for the Committee
- Provided map shapefile via FTP site to interested users
- Revamped Committee structure into working groups to achieve specific goals (i.e., pursuit of grants, outreach, map technical review and development)
- Assisting the M&A Committee in organizing a Quality Assurance workshop

Data Management

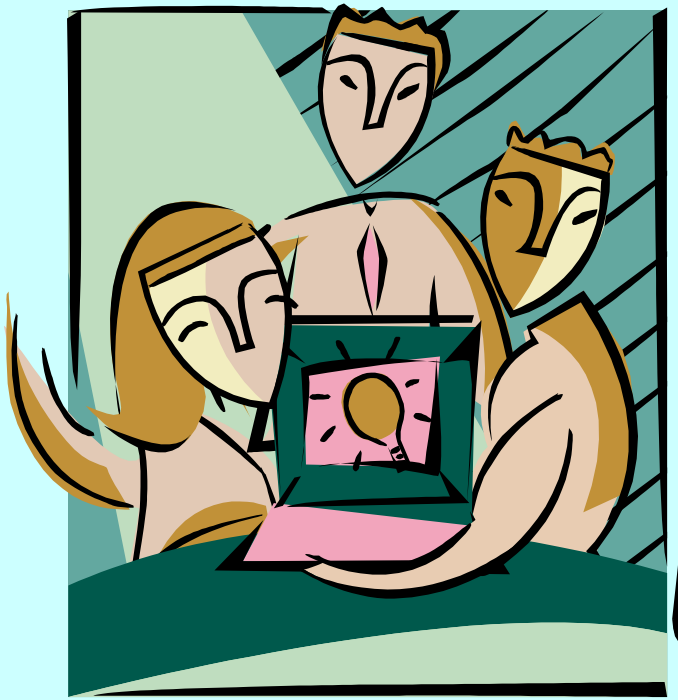
Future activities & objectives…



- Bring grant monies into the Committee for map and Web form development
- Improve map and Web form functionality
- Outreach to local groups (schools, local watershed groups, etc.) on the Committees activities and potential uses for the map
- Coordinate more with the National Council, as well as federal agencies (EPA, USGS on Data Standards)
- Provide better public access to Maryland's water quality data

Long Term GW Level Monitoring

Workgroup goals…



- Evaluate current ground-water level monitoring networks.
- Make recommendations to improve the network based on monitoring objectives.
- Publish a report that documents the workgroup's recommendations.

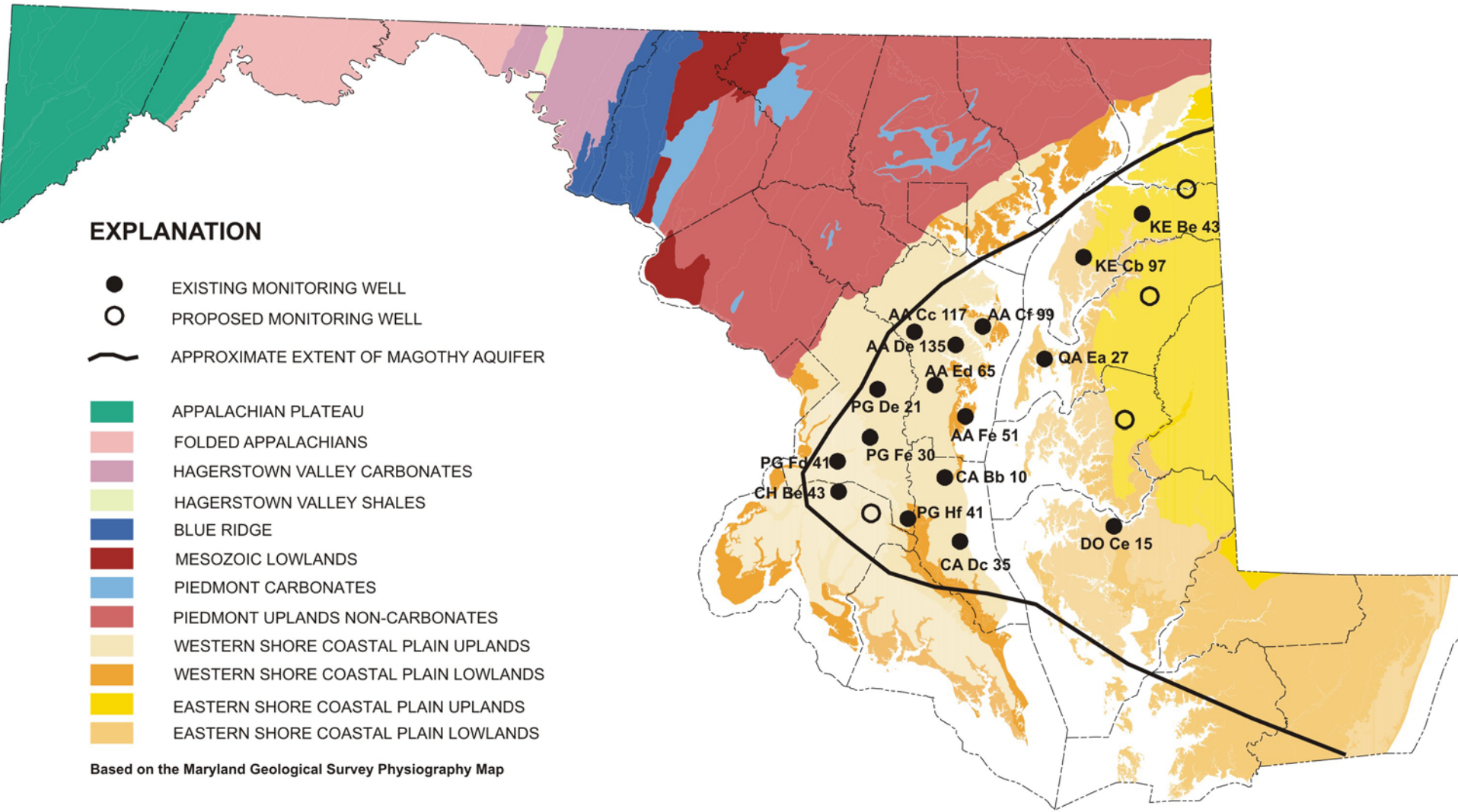
Long Term GW Level Monitoring

Objectives of Monitoring Network(s) in Maryland

- Climate variability
- Ground-water use
- Ground water and environmental systems
- Ground-water research
- Water quality*

*Currently not a direct goal of the workgroup

MAGOTHY GROUND-WATER MONITORING-WELL NETWORK FOR MARYLAND



Integrated Hydrologic Monitoring

MWMC workgroup on integrated monitoring…

- Organized in June 2003
- Agency scientists and university researchers
- Planning for 2004 Workshop

Integrated Hydrologic Monitoring

Assessment questions addressed by integrated monitoring...

What are the...

- Effects of natural variations in climatic conditions on water levels and flow
- Differences in hydrologic system responses in different geologic and climatic settings

- Effects of land-use and other human activities on hydrologic system responses
- Effects of water extraction for water supply and other infrastructure on water flows and availability